

### **AMENDMENTS TO THE SPECIFICATION**

Please replace the Abstract with the new Abstract as follows:

Methods and articles on manufacture are provided for capsules and the formation of capsules. In one embodiment, a capsule is provided including an envelope comprising at least three polyelectrolyte layers and containing only one dye with at least one of the at least three polyelectrolyte layers being labeled with only one dye, and the dye is covalently linked to a sensitive material with the sensitive material adapted to react to changed environmental conditions by an increase in volume or a decrease in volume, and the concentration of the dye is sufficient to form dimers, aggregates or excimers, wherein the dimers, aggregates or excimers self-quench fluorescence or form a new emission band and the capsule has a diameter of less than 100  $\mu\text{m}$ . Capsules described herein may be used as sensors after a sensitive intermediate layer has been introduced.

Please add the following paragraphs after the Title on Page 1, Lines 3-5.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

So that the manner in which the above recited features of the present invention can be understood in detail, a more particular description of the invention, briefly summarized above, may be had by reference to embodiments, some of which are illustrated in the appended drawings. It is to be noted, however, that the appended drawings illustrate only typical embodiments of this invention and are therefore not to be considered limiting of its scope, for the invention may admit to other equally effective embodiments.

Figure 1 illustrates the structure of the fluorescent dyes used according to one embodiment of the invention;

Figure 2a) illustrates the absorption spectrum (normalized intensity) PAH-FI, PAH-Rho and PAH-Cy5 according to one embodiment of the invention;

Figure 2b) shows the fluorescence spectrum (normalized intensity) of PAH-FI, PAH-Rho

and PAH-Cy5 according to one embodiment of the invention;

Figures 3a-3d illustrate confocal images of a mixture of color-coded capsules according to one embodiment of the invention of a fluorescein channel, *i.e.*, the fluorescence of fluorescein (3a), a rhodamine channel (3b), a Cy5 channel (3c), and the superimposition of the three color channels (3d);

Figures 4a-4b illustrate a mixture of colored capsules 2, 7, 1 and 5 according to one embodiment of the invention in a superimposition image of the three color channels of the fluorescence microscope (4a) and with a profile of the fluorescence intensity along the white line (4b);

Figures 5a-5f illustrates the principle of construction of the layer combinations prepared according to one embodiment of the invention having different FRET signal intensities in association with the same dye concentration (5a-5c) and having different FRET signal intensities in association with different dye concentrations (5d-5f);

Figure 6 illustrates the principle of the steps of the so-called "ship-in-bottle" synthesis of polymers within the capsules according to one embodiment of the invention.

Figure 7 illustrates the principle of loading MF capsules by means of using salt or the pH to switch the permeability of special capsules for corresponding macromolecules according to one embodiment of the invention;

Figure 8 illustrates a diagram of the construction and mode of action of the two different sensor capsules according to one embodiment of the invention; and

Figure 9 illustrates the signal intensities of a capsule according to one embodiment of the invention;

Figure 10 illustrates the signal intensities of another capsule according to one embodiment of the invention.